ENVIRONMENTAL REPORT CARD

FOR SPRINGFIELD AND GREENE COUNTY

2007 - 2009

Compiled by:

The Environmental Collaborative

of the

Community Partnership of the Ozarks

Released: Summer, 2010

ENVIRONMENTAL REPORT CARD 2007-2009

Introduction

In 2000, a national effort led by the National Association of County and City Health Officials (NACCHO) developed a community environmental assessment guidance document following the *Protocol for Assessing Community Excellence in Environmental Health* (PACE EH). Utilizing this protocol, the Springfield-Greene County Health Department called upon the Environmental Collaborative of the Community Partnership of the Ozarks to partner in this community-wide assessment effort. Barbara Lucks, Chair of the Environmental Collaborative, led that organization in agreement to partner with the Springfield-Greene County Health Department in this effort. At the Environmental Collaborative meeting in October 2000, the assessment process began. Springfield/Greene County was the first community in Missouri to conduct this comprehensive assessment.

Recognizing the need for a plan to complete the process of developing a large-scale environmental health assessment, the *Protocol for Assessing Community Excellence in Environmental Health* (PACE EH) became the chosen methodological framework. Thirteen tasks comprise of this assessment process outlined in PACE EH. In developing this project, the Springfield-Greene County Health Department has observed the protocol suggested by PACE EH. The thirteen tasks delineated by PACE EH are:

Task One: Determine Community Capacity to Undertake the Assessment
Task Two: Define and Characterize the Community
Task Three: Assemble a Community-Based Environmental Health Assessment Team
Task Four: Define the Goals, Objectives, and Scope of the Assessment
Task Five: Generate a List of Environmental Health Issues
Task Six: Analyze the Issues with a Systems Framework
Task Seven: Develop Locally Appropriate Indicators
Task Eight: Select Standards against which Local Status can be Compared
Task Nine: Create Issue Profiles
Task Ten: Rank Issues
Task Eleven: Set Priorities for Action
Task Twelve: Develop an Action Plan
Task Thirteen: Evaluate Progress and Plan for the Future

Work groups continued their work, offering a number of recommendations related to protecting our natural environment, ensuring a high quality of life and a healthy environment for our citizens, and raising the level of awareness and participation in those efforts.

Regular reports to the community have been prepared and distributed through "State of the Environment in Springfield/Greene County Environmental Report Card."

This Environmental Report Card represents a review of the period 2007-2009. Recommendations from the original "State of the Environment Report" are included at the beginning of each status report. The original "State of the Environment in Springfield/Greene County" recommendations and previous Environmental Report Cards can be found on:

www.OzarksEnvironment.com

We are grateful to those individuals and organizations that have participated in the preparation of the this issue of the Environmental Report Card and we encourage you, too, to join the progressive, active community that works to protect and preserve our natural environment, recognizing the critical relationship between the health of our natural environment and the health and well-being of our citizens.

Barbara J. Lucks
Materials Recovery/Education Coordinator
Springfield Public Works Department
Chair – Environmental Collaborative
Community Partnership of the Ozarks

Air Quality

Air Quality Recommendations

- Support a strong energy conservation program through City Utilities that would include: education, financial incentives, recognition and tiered-rate plan associated with levels of use (See Energy, page 8)
- Support waste prevention and recycling efforts that assist in reducing greenhouse gasses and conserving energy
- Create education, outreach and incentive programs to increase the voluntary air quality practices of businesses, industries and citizen
- If necessary, review and revise current regulations, ordinances and building codes to ensure that air quality protection practices are in place and followed
- Encourage private sector employers to promote energy-wise transportation alternatives by participating in City Utilities' Ridership Benefits (CURB) program (See Transportation, page 11)

Ozarks Clean Air ALLIANCE

Air Quality

Status and Activities

Air quality in southwest Missouri is a growing concern. As the population grows, so do the sources of air pollution within the communities. Historically, southwest Missouri has enjoyed relatively good air quality. However, more studies show that people exposed to lower levels of air pollution are experiencing adverse health effects across the country, including the Ozarks. These health issues include irritation of the respiratory track, aggravation of asthma, decreasing lung capacity, and aggravation of respiratory and cardiovascular disease. Children and older adults are at a greater risk of being affected by local air pollution. In addition to the adverse health effects, local air pollution can also adversely affect plants. To address this growing issue, Environmental Collaborative of the Community Partnership of the Ozarks created the Ozarks Clean Air Alliance (OCAA) as a subcommittee in 2007. In 2009, the OCAA introduced the Clean Air action Plan (CAAP) for southwest Missouri and posted it on their website at www.showmecleanair.com. The CAAP is a voluntary and non-regulatory plan to help reduce ground level ozone pollution and keep the region from violating EPA air quality standards. OCAA took the plan to various communities, businesses and organizations in southwest Missouri to gather support and participation. To date, there are over 50 organizations in 15 counties that agreed to support the OCAA. Many strategies identified in the CAAP have been implemented and are working to reduce air pollution; however, the OCAA needs more help. The goal of the CAAP is to reduce the region's air pollution before it is designated "non-attainment" and forced to implement regulations that will affect businesses and communities. In order to accomplish this goal, the OCAA will need strong support and commitment from communities to identify and implement air pollution reduction strategies.

OCAA has developed a new air quality metric to track days in which local air quality has exceeded national standards and may pose a health risk. The Springfield-Greene County Health Department provides daily forecasts of air pollution which can be found on their website and at www.airnow.gov. Air monitors located in the region will determine the actual amount of air pollution.

The OCAA has been effective in bringing over $1.4 million in grant funding to reduce pollution from diesel engines in southwest Missouri. This funding has helped retrofit or replace school buses, local government fleets, and private fleets to reduce air pollution in southwest Missouri communities.

Left: Natasha Longpine, Ozarks Transportation Organization
Middle: Michelle Garrand, Community Partnership of the Ozarks
Right: Doug Neidigh, Drury University—Ozarks Center for Sustainable Solutions

OCAA Display with electric mower.

Air Quality Subcategory: Energy

City Utilities of Springfield (CU) is a community-owned utility serving southwest Missouri with electricity, natural gas, water, telecommunications and transit services. CU's 109,000 customers enjoy electricity prices among the lowest in the United States.

Energy Management and Conservation

City Utilities of Springfield is committed to providing energy management and conservation education, training and incentives to its customers. This commitment has been an ongoing effort for three decades and continues today with an enhanced portfolio of programs.

This commitment is based on the premise that when utility customers take action to use energy and water more efficiently, they conserve the resources our entire community depends upon to sustain an excellent quality of life. By making wise energy and water choices, customers enable CU to extend the life of current and future resources, both natural and man-made.

In response to a recommendation made by the Power Supply Community Task Force that CU implement a more aggressive energy conservation program, a study was completed to evaluate the electric, natural gas, and water efficiency potential for the residential, commercial, and industrial customers of CU. The study was completed by Frontier Associates in partnership with Austin Energy to: 1) conduct an assessment of current efficiency levels and market characteristics; 2) evaluate currently-available technologies and strategies to improve those efficiency levels; 3) identify cost-effective programs that can help City Utilities customers realize their potential to improve their energy and water efficiency; 4) and estimate the market potential for these programs.

Once this study was completed, CU began to develop a program portfolio from among the cost-effective programs identified by the Frontier Team. It was outlined that utilities of a size and market position similar to CU should consider the following objectives when developing a portfolio of programs: 1) accessibility by all customers; 2) rapid deployment; 3) low development costs; 4) low administration costs; and 5) low risk.

To fund this effort, a rate increase package was passed by the Springfield City Council on March 20, 2006. This increase went into effect October 1, 2006 and generates $1 million per year for energy management and conservation programs.

In the first three years, CU designed and implemented fifteen new rebates and incentive programs:

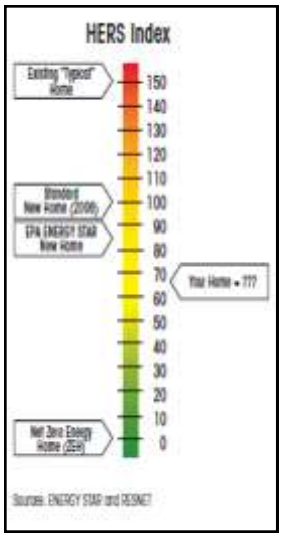
1. ENERGY STAR® Programmable Thermostat Rebate
2. Residential Insulation Rebate
3. Commercial Lighting Rebate
4. Building Operator Certification Program
5. Irrigation System Rain Sensor Rebate
6. Efficient Toilet Rebate
7. ENERGY STAR® Central Air Conditioner Rebate
8. ENERGY STAR® Natural Gas Furnace Rebate
9. ENERGY STAR® Air-Source Heat Pump Rebate
10. ENERGY STAR® Geothermal Heat Pump Rebate
11. Preseason HVAC Tune-Up
12. ENERGY STAR® Home Rating Service
13. EnergyWise Grant Program
14. Green Building Program
15. Low-Income Insulation Program

cuenergywise.com

Save today with a CU rebate on programmable thermostats. City Utilities electric and/or natural gas customers are eligible for a $15 rebate after the purchase and installation of a programmable thermostat.

All of these programs have been added to an existing portfolio that includes the Home$ense Residential Energy Audit, commercial energy and lighting audits, online energy and water services, low-income weatherization and the annual ENERGY STAR® Change a Light, Change the World compact fluorescent light rebate.

Energy Management and Conservation, Continued



An ENERGY STAR® Home Rating is performed by a certified Home Energy Rating System (HERS) rater.

Participation in these programs has increased dramatically over the past three years. Programs were implemented as they were developed and staged in over time. The increase in the number of programs offered, as well as the increase of customer, contractor and retailer awareness, account for the significant increases from FY 2007 to FY 2009.

Following are the number of rebates processed and audits conducted during each fiscal year:

2007 1,087

2008 5,128

2009 6,814

Below are the accumulated estimated annual savings attributed to all programs through September 2009:

Electric		Natural Gas	Water
kWh	kW	Therm	CCF
19,732,674	2,151	731,747	37,116

This equals the annual electric consumption of 1,850 homes, the annual natural gas consumption of 948 homes, and the annual water consumption of 464 homes.

As this commitment continues, CU will use the Frontier Associates report as a guide in implementing new programs.

Program Helps to Better Insulate Homes for Customers in Need:

City Utilities of Springfield implemented a program to install additional attic insulation in the homes of 300 low-income customers in the utility's service area. The customers were identified as those who had received federal low-income energy assistance funds through the Missouri Department of Social Services. Homeowners were selected first, and once the customers agreed to participate, a local insulation contractor conducted a site visit and installed the additional insulation, if needed. Benefits of the program include reducing the impact of potentially higher future energy costs, providing long-lasting improvements to the home, and potentially making the utility bill more affordable for the customer. Ultimately, this type of program may reduce the amount of crisis assistance required by state and local agencies.

Emission Reductions:

The 2006 rate increase that provided funds for CU's energy management and conservation programs also financed the addition of new emission control equipment at our electric generating stations. These reduction efforts have centered on nitrogen oxide (NOx) compounds, which contribute to the formation of urban ozone and respirable particulates. In 2007, the low-NOx burners at the James River Power Station were replaced with a second generation design coupled with a selective non-catalytic reduction system. January 2009 saw the deployment of a selective catalytic reductor on Southwest Power Station Unit 1. As a result of these improvements, total NOx emissions decreased by 65% over the past three years. These NOx reductions, along with pollution reduction in other utility and industrial sources and diesel mobile sources in the region, benefits local air quality.

Energy Management and Conservation, Continued

Carbon Sequestration Research Underway:

Safeguarding our environment means finding innovative solutions for the future. City Utilities of Springfield, along with other utilities across the nation, faces the challenge of reducing carbon emissions in a safe, effective, and economical manner. One of the most promising possibilities for reducing emissions appears to be carbon capture and sequestration. In 2008, CU led the formation of a consortium of public and private utilities, state and federal agencies, and leading universities to undertake ground breaking research at CU's Southwest Power Station. At that local site, geological formations unique to Missouri will be tested for their ability to store carbon in perpetuity—a breakthrough that would dramatically reduce costs and increase the viability of carbon storage in Missouri. The multi-year project is funded by CU and research participants with a multimillion-dollar grant from the United States Department of Energy.

Biomass Generation Test Project Garners Local, National Attention:

The James River Power Station's project to test wood that has been torrefied—converted into a charcoal-like material—for use as a fuel to generate power garnered widespread attention, including a national media report. The test at the station made history as the largest "test burn" of the material in North America to date. When KMSU (Local National Public Radio affiliate) covered the "test burn", the story was picked by the nationally syndicated "Morning Edition" program, which regularly draws millions of listeners across the country. The station continues to evaluate torrefied wood and other biomass options for the future.

Wind Contract Brings Renewable Power Home:

CU's commitment to providing a balanced approach grew stronger during 2008 with a search for a wind power contract suitable for Springfield. The search concluded with the selection of a project to supply wind-generated electricity to Springfield for the next 20 years. The Smoky Hills Wind Farm in Salina, Kansas provides CU with 50 megawatts annually.

Landfill Gas-to-Energy Project Generates Renewable Power:

The Noble Hill Landfill Renewable Energy Center generated electricity for the fourth year in 2009. Methane gas produced by the City of Springfield's sanitary landfill is harnessed at the generator, providing 3.2 megawatts of electricity to customers. The joint project uses a previously discarded byproduct to produce energy for the community.

Air Quality Subcategory: Transportation

Progress Towards Recommendations

- Since the State of the Environment Report was released in 2007, the amount of trails, bike routes, and open space has increased as can be seen in Table 1.

	2003	2004	2005	2009
Miles of Trails	38.5	47.8	58	96.62
Miles of Bike Routes	52	57.5	58	58
Acres in the Park System	2,557.63	2,600.29	2,706.76	3,314

Table 1: Trails, Bike Routes, and Park Space in the Springfield and Greene County area.

- The Ozarks Transportation Organization (OTO) has implemented an improved ridematching system, OzarksCommute.com, which allows potential carpoolers to login to a website, create a profile, view matches on a map, and initiate communication with other potential carpoolers. The service has added two additional counties to cover all of southwest Missouri.

- OzarksCommute.com has the ability to create custom portals for employers as well. These have currently been created for St. John's Regional Health Center, the City of Springfield, Greene County, and City Utilities.

- City Utilities of Springfield continues to offer its CURB program and this is promoted not only by CU staff, but also alongside OzarksCommute at community events. OTO staff is involved with a number of community events in the promotion of alternative transportation, including Earth Day at the Discovery Center, career fairs, Greenfest, St. John's Energy Conservation Fair, and others.

OTO County Coverage

- Ozark Greenways also attends community events to promote and provide education about the greenway trails. Ozark Greenways spearheads Bike to Work Week, which has expanded into Bike, Bus, Walk to Work/School Week with the number of participants growing each year.

- Both Greene County and the City of Springfield now require trail connections in new neighborhood developments.

- Ozark Greenways has enveloped the Springbike Advocacy Committee. This committee is now called the Sustainable Transportation Advocacy Resource Team, or STAR Team. The purpose of this group is to advocate for improved bicycle and pedestrian transportation facilities and policies. STAR Team also serves as a channel for education and encouragement of alternative transportation. STAR Team is developing a campaign called Bike Springfield and has developed a bicycling guide called "Drive Less, Live More – Bicycling Springfield" which promotes utility cycling, or riding for transportation versus recreation. The guide includes information on rules, safety, and maintenance. STAR Team also resubmitted for designation as a Bicycle Friendly Community, to improve upon the honorable mention received in 2005. STAR Team has also created its own baseline/progress report card. The first year's grade for 2007/2008 was a C-. STAR Teams look to improve that grade in the future.

Progress Towards Recommendations, Continued

- Another community organization that has formed since the State of the Environment Report is the Childhood Obesity Action Group (COAG). COAG formed out of the need to reduce childhood obesity rates in the Springfield area. COAG focuses on what can be done within the schools, the built environment, education of parents (especially through the workplace) and other child care and activity programs. The group brings together representatives from each of these elements and explores ways initiatives can be supported including funding opportunities and policy change. Recently, COAG partnered with the YMCA to do a pilot project for the Community Healthy Living Index. This program reviews key elements of the community for access to a healthy environment, healthy food, and additional policies which promote health. The pilot project conducted targeted assessments, but the goal is to carry this throughout the community for an overall picture of community health.

- Ozarks GreenScore is a partnership of Springfield/Greene County Choose Environmental Excellence, Drury University, Students in Free Enterprise, Partnership for Sustainability, and Drury University's Ozarks Center for Sustainable Solutions. It offers technical assistance and recognition for businesses through waste reduction and other environmentally responsible practices, including the promotion of carpooling and alternative transportation. The program also raises awareness in the business community regarding resources and technical assistance providers.

- The new airport terminal has been completed and opened on May 6 of 2009. The Springfield-Branson National Airport now offers ten non-stop destinations through four airlines, as well as connecting flights throughout the United States and the world. Passenger numbers from May 2009 were 81,496 versus 69,368 in May of 2008. Growth continued for all of 2009 and outpaced other airports in the Midwest (See Fig. 1). The availability of low cost flights in the region reduces the number of trips to the region's larger airports.

- The new Midfield Terminal was constructed with a "natural" theme. The interior is meant to reflect the natural beauty of the Ozarks, highlighting the water and limestone features of the region. The building itself is 275,000 square feet compared to the 150,000 square feet of the former terminal.

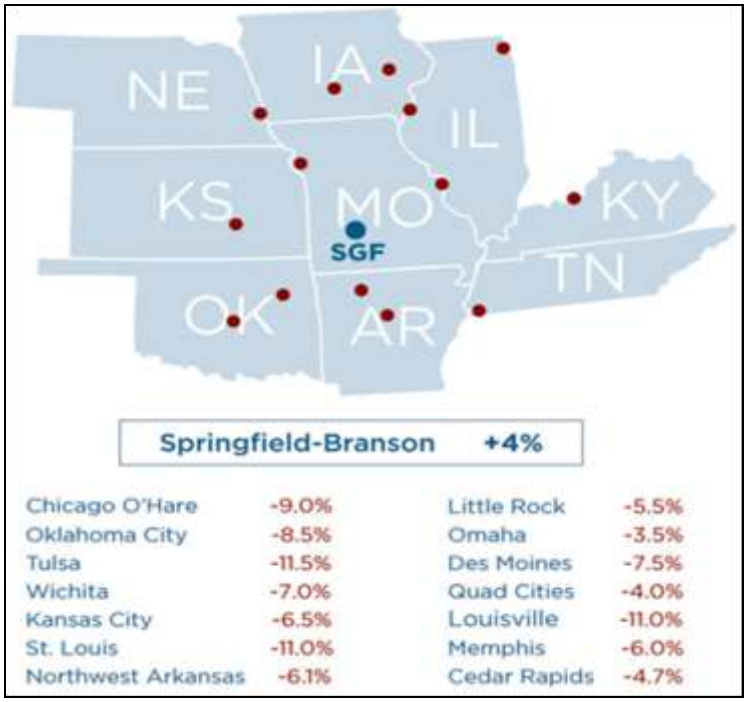


Figure 1. Passenger Growth 2008-2009
Source: http://www.FlySpringfield.com

Community Health

Community Health Recommendations

Continue efforts to ensure the environmental health of Springfield / Greene County through programs and initiatives pertaining to prevention, enforcement and impact of the community's health. Such initiatives would include neighborhood clean-ups of trash as well as tire and brush removal

Continue prevention, education and enforcement programs designed to ensure food / health safety of Greene County

Continue programs and initiatives that pertain to promoting active lifestyles (for example "Hearts 'N' Parks", Ozark Greenways) and good nutrition including the newly introduced food pyramid (www.mypyramid.gov)

- Develop a coordinated wellness program involving local businesses, agencies and healthcare providers as well as local elected government officials to proactively help prevent illness and promote healthy, active lifestyle choices

Continue activities and projects that encourage planning, preparation and prevention efforts to reduce communicable disease outbreaks

Utilize medical and behavioral health protocols for children that have been exposed to clandestine methamphetamine lab hazards in their home. Also, support continuing effective community education programs: including multi-media campaigns that promote research based programs as solutions.

- Assess the level of mercury contamination in fish through ongoing monitoring and tissue testing

Community Health

Status and Activities

Active Lifestyle:

Springfield/ Greene County residents are fortunate to live in a community with an abundance of parks, trails and recreational opportunities. With all of the opportunities for exercise, local citizens have no excuse for not maintaining an active lifestyle. Local organizations and agencies continue to promote healthy, active lifestyles. Physical activity does not have to be training for a marathon or doing something is not enjoyable. By taking a few extra steps a day, people will be on their way to making a difference in their health status. When they take those extra steps, they are helping themselves avoid adverse health conditions such as heart disease, diabetes or obesity.

Food Safety:

The Springfield-Greene County Health Department has recently moved to the priority-based inspection system that is established under the Missouri State Food Code. Food establishments are inspected one to three times a year using the Missouri State Food Code. The frequency of inspection is based on the type of food served, the population served, the difficulty level of food preparation and the inspection history of the facility. Restaurants preparing food from raw ingredients are inspected more often than convenience stores that serve only non-potentially hazardous foods such as popcorn and soda. Previously, every food service establishment was inspected twice annually.

Emerging Issues

Urban Deer:

The dramatic increase in the deer population on the urban fringe has created many problems including an increase in deer-car collisions, tick-borne illnesses and the destruction of residential ornamental plantings. There are no easy solutions to this problem. While hunting is the most cost-effective method to thin the urban herd, it can prove to be controversial.

Springfield City Council has considered the authorization of an urban hunt managed by the Missouri Department of Conservation to help control the size of the urban herd. If nothing is done, the herd becomes vulnerable to epizoonotic diseases which can have a devastating impact on a deer herd.

Enjoying a Springfield park.

Environmental Education

Environmental Education Recommendations

Encourage school boards and administrations to work with environmental educators and environmental education resources to raise awareness of educational opportunities available outside the classroom, as well as in the classroom

Encourage environmental educators and environmental education resources to continue their work to make educational opportunities and materials "teacher-friendly"

Continue the work of Interpreters Coalition which includes grant applications for funding for field trips, assisting educators in planning and making field trips, matching field trips to state and local testing requirements, and promoting availability of field trips

Environmental educators and environmental education resources shall work with local colleges and universities offering teaching programs in an effort to encourage an interest in environmental education as a component of science preparation

Encourage environmental educators to participate on community committees and task forces which often influence environmental decisions

Investigate the development of a magnet school centered on environmental education / natural science issues

Environmental Education

Status and Activities

- Richard Louv, author of *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder*, was a featured speaker at a well attended event in Springfield in October, 2008. Louv spoke to area teachers, as well as the public.
- There is a current legislation called "No Child Left Inside" to help promote environmental education and the outdoors. It was introduced in September, 2008 and passed only in the U.S. House of Representatives, but is expected to be introduced again. This would be part of the Senate Bill commonly known as "No Child Left Behind".

Progress Towards Recommendations

Interpreter's Coalition of Southwest Missouri

- The Interpreter's Coalition helps local formal and non-formal educators know about the environmental outdoor education resources available in the area through events like "Free Wheelin' Friday."

- Project WET (Water Education for Teachers) has matched all WET activities with the State Grade Level Expectations (grades K-8) and Course Level Expectations (grades 9-12), which makes this program more "teacher friendly" and usable for area teachers.

- Over 80 local teachers have attended Project WET, Project WILD and Learning Tree Project workshops in order to use these activities within their classrooms. Twelve local schools are participating in the Missouri Department of Conservation's *Discover Nature Schools* Program for elementary and middle schools.

Project WET™

Water Education for Teachers

The Community Foundation of the Ozarks Stewardship Ozarks Initiative is a funding source to strengthen regional organizations that are committed to conservation efforts in the Missouri Ozarks through planned giving, targeted grantmaking, and endowment building. From 2007-2009, the Initiative provided $451,142.15 through 38 grants for local and regional organizations.

The Wonders of Wildlife Museum (WOW) received two Community Foundation of the Ozarks (CFO) grants that provided all Springfield Public Schools (SPS) 5th graders a visit to Giboney Cave Outdoor-Underground classroom and 7th graders to the WOW museum during the 2006-07 school year. In the 2007-08 school year, the 5th graders traveled to the Watershed Center Park's Outdoor Initiatives at Valley Water Mill Park and 2nd graders visited the WOW Museum. Both field trip events were sponsored by WOW, the Springfield-Greene County Park Board and the Watershed Committee of the Ozarks.

The local Sierra Club White River Group also received a CFO grant for the 2008-09 school year to produce *Kid's Guide to the Ozarks Outdoors* in partnership with several groups and organizations. This booklet of 40 outdoor Ozark sites for students to visit includes pictures, descriptions and visiting hours. There are outdoor activities included for classrooms, students, or families to take and complete at home or at the sites. These booklets were given to all 2008-09 5th grade students with a class set to all 5th grade teachers for future use. Additional copies were distributed among area non-formal educators.

COMMUNITY FOUNDATION OF THE OZARKS

"Clean air, clean water, like freedom, isn't free. It takes work and resources and commitment to keep what we have and make it even better."
Peter Herschend, Chairman, Upper White River Basin Foundation

- A total of 380 pre-service and in-service (practicing teachers) have received Project WET training through either MSU Earth Science education classes or as part of a 3-year MSU SMART (Science and Mathematics Achievement from Rural Teachers) grant. Teachers in the SMART grant, along with MSU math and science faculty Dr. Jill Black, Dr. Roberta Aram and Dr. Cheryl Wrinkle , participated in environmental science activities in the 2008 year. These activities included field and lab activities involving climate, energy, and cave science.

- Missouri Department of Conservation Education Consultant, Jay Barber, conducts sessions for MSU and Evangel pre-service teachers (college students).

- Laurie Duncan, Education Director at the Discovery Center, is on the Elementary Science Curriculum Development Council for SPS as a community representative. This committee helps to make decisions on curriculum revisions and resource adoptions.

Many environmental educators participate in local groups such as the Environmental Collaborative of the Community Partnership of the Ozarks (Barbara Lucks serves as Chair), and serve on advisory boards of local environmental organizations (Dr. Janice Greene serves as President of James River Basin Partnership and Mike Kromrey chairs the Springfield/Greene County Environmental Advisory Board).

Progress Towards Recommendations, Continued

- During the 2007 – 2009 period, Springfield/Greene County Choose Environmental Excellence completed the following activities:
  - Continued progress with trained, certified dentists who had participated in the mercury amalgam recycling project
  - Continued Show-Me Yards & Neighborhoods project, including homeowners and professionals workshops – this program went statewide
  - With other partners, began the Ozarks GreenScore project, offering technical assistance, benchmarking and recognition for businesses and industries as they work toward more sustainable practices
  - Hosted annual Awards Luncheon in conjunction with city-wide Earth Day celebration
  - Hosted annual Environmental/Conservation Education Summit, attended by an average of 40 representatives of that many agencies and organizations
  - Working with the City of Springfield and Solid Waste District "O", expanded special event recycling services to include venues such as the Ozark Empire Fair, events at the Expo Center and others
- The WOLF School (Wonders of the Ozarks Learning Facility), a joint project between Springfield Public Schools and Wonders Of Wildlife, opened for the 2008-09 school year. The focus is on using the outdoors to teach Springfield 5th graders.
- Participation in Springfield – Greene County Park Board's Outdoor Initiatives Environmental Literacy and Education opportunities has increased since 2006 by approximately 99% (7,460 in 2006 to 14,909 thru November 2009). Top basic educational experiences and opportunities appealing to the community included: Artifacts and Fossils, Bat Education, Camping, Cave Education and Safety. Experiences and opportunities on the recent upswing include: LNT (Leave No Trace), Outdoor Safety and Survival. The Outdoor Initiatives Staff have proven to be community leaders in educational awareness when it comes to the environmental disaster of White Nose Syndrome in Bats (WNS). Staff set on numerous environmental – outdoor related boards and committees, have participated in numerous environmental – outdoor summits and trainings, and have presented at several state conferences.

WOLF student in Bull Creek

WOLF School Canoeing

WONDERS OF THE OZARKS LEARNING FACILITY

Emerging Issues

- The passage of No Child Left Inside would support teaching environmental education in public schools.

Other Accomplishments and Progress

- Nearly forty organizations and agencies reported at the annual Environmental/Conservation Education Summit (EE/CE Summit).
- The Missouri Environmental Education Association (MEEA) 13th Annual State Conference was held October 16-18, 2009 at the OTC Richwood Valley campus near Ozark. Forty sessions, both indoor and outdoor, seven field trips, and five workshops were offered, including national Leave No Trace certification. Featured speakers and presentations were by Loring Bullard and the WOLF school. Other features were a Dutch Oven Dinner and entertainment by The Fishin' Magicians. Approximately 90-100 individuals participated. Janice Greene received the MEEA Lifetime Achievement Award and the Missouri State University's Students for a Sustainable Future received the student group award. Local environmental educators organized the conference and have had leadership roles in MEEA. Dr. Jill Black, Melvin Johnson, Misty Mitchell, Mike Kromrey have been on the Board of Directors, with Dr. Black and Mr. Kromrey in presidential roles.
- Dr. Jill Black presented at the North American Association for Environmental Education's research symposium—October 2008 in Wichita, KS.

Additional Objectives

- Continue to make educational opportunities and materials "teacher friendly" so they can be used immediately as part of No Child Left Inside and also be more useful to educators.
- Encourage more participation from all county and area school districts at the Environmental/Conservation Education Summit (EE/CE Summit) .
- Giving the next generation the environmental understanding and critical thinking skills to tackle increasingly complex, pressing, and global environmental issues. Also provide citizens that can help lead our community to realize a more sustainable future.
- Integrating Environmental Education into the curriculum and finding ways to help teachers understand and utilize the resources available to them.
- The Springfield – Greene County community needs to continue developing and educating the population (youth, adults, and community leaders alike) on the importance of environmental/outdoor education, experiences, and opportunities.
- Expand participation in *Discover Nature Schools* as a great resource especially suited for schools with budget restrictions.

CEE Awards 2008
Sarah Davis , Tim Smith presenter

CHOOSE ENVIRONMENTAL EXCELLENCE
Springfield Greene County

Environmental Education

Subcategory: City of Springfield Stormwater Education Program

Since receiving the Federal MS4 Stormwater Permit in 2002, the City of Springfield (the City) has expanded its storm water education efforts into a comprehensive program that targets all audiences and age groups with innovative tools and materials for both passive and hands-on learning. The following are some of the major highlights of this program:

Rain Barrel Program: The City and James River Basin Partnership (JRBP) began a rain barrel program in 2007, with a rebate for Greene County residents funded by the Sanitary Services and Solid Waste Management Divisions of Springfield Public Works, Greene County Resource Management, and City Utilities. Since the program began, 924 rain barrels have been sold to Greene County residents.

Rain Gardens: The City has collaborated on 11 rain gardens with local schools, neighborhoods, and churches by providing planning and design assistance, funding, and construction.

Storm Drain Manhole Cover Design: In 2006, the City held a contest to solicit public input for a new storm drain manhole cover design that incorporates a water quality protection message. The new design, which includes the slogan "Upstream Starts Here-Protect Our Waterways", was adopted as the standard design for all new storm drains in July 2007.

Storm Drain Marking: Existing storm drains can also be an opportunity to educate the public through storm drain marking with a similar message that is found on the new storm drain manholes.

Storm Drain Art: The City worked with local students on an innovative project to create storm drain art that educates the public about storm water in downtown Springfield.

Storm Water Education Campaign: The City and JRBP partnered on a stormwater education project funded by Community Foundation of the Ozarks that targeted key topics such as pollution reporting and responsible fertilizer use with billboards, bus wraps, radio announcements and other methods.

Stream Signs: Stream signs have been installed at 27 locations on Galloway, Jordan, Wilsons, Fassnight and South Creeks and Ward Branch to encourage the public to recognize our urban streams as valuable water resources.

"Save it FROM a Rainey Day"
Rain Barrel Poster

Horrace Mann Elementary School Rain Garden

City of Springfield Stormwater Services manhole cover

Left: Storm Drain Marking

Right: Storm Drain Art

Stormwater Education Program, Continued

Adopt-A-Stream:

The Adopt-A-Stream program coordinates volunteers to pick up litter in streams. Since the program began in 2005, 124 cleanups have been completed, removing approximately 122 cubic yards of trash from local streams.

School Education:

The City provides funding support to the Watershed Committee of the Ozarks (WCO) which provides education/outreach with a strong focus on educating school kids through classroom lessons and field trips to the Watershed Center at Valley Water Mill.

The City also partners with WCO, Greene County, JRBP, and Missouri State University to fund and house the Project WET State Coordinator who provides storm water education in local schools. In FY2009, 35 classroom lessons and 14 field trips were completed.

Storm Water Website:

The City's Storm Water Services Division website is an outstanding resource of information about rain gardens, rain barrels, stormwater pollution prevention, and other projects. In FY2009, the site received 19,638 visitors. Figure 2. shows the increasing trend of visitors to the website since 2005.

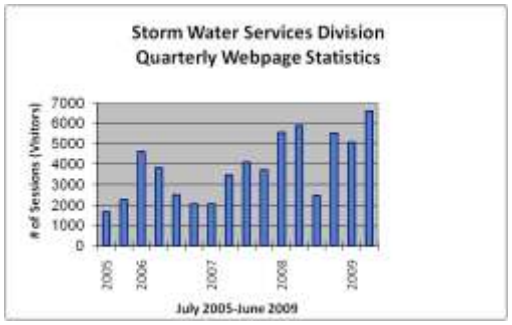


Figure 2: City of Springfield Webpage Visitor Statistics

Adopt-A-Stream Sign and South Creek Sign

Students participating in a stream clean-up

Population Growth

Population Growth Recommendations

- Support Greene County Comprehensive plan which balances the need for maintaining green space and protecting sensitive areas such as watersheds, while promoting growth and development
- By recognizing the cultural, economic, and environmental benefits of productive farmland, the workgroup recommends a cooperative effort toward protecting selected, qualifying properties
- Continue to use Urban Service Area boundaries in Springfield and other cities of Greene County to indicate the areas in which municipal sewer services will be available (within certain limitations) to all users who request the service and where urban transportation improvements will be focused. Considerations should be made to use natural boundaries vs. political boundaries in establishment of Urban Service Area
- Support public and private sector initiatives that reduce local dependence on petroleum including the use of public transit, carpooling/ride share, etc
- Continue the Brownfield's program as it pertains to prevention, enforcement, and impact of the community's health

Population Growth

Status and Activities

Growth in southwest Missouri continues at a rapid rate as it has the past several years. It is projected that Greene County population will increase 16% (89,434 persons) by 2030, ranking it third in Missouri counties (http://oa.mo.gov/bp/projections/fig2-5.pdf). Much of the area growth will continue outside Greene County. Christian County is expected to double in population by 2020 and is ranked number one in the state for growth during the next ten years followed closely by Stone and Taney counties (http://www.oseda.missouri.edu/trendltr/tr060794.html). With the close proximity of these counties, it is important to consider their growth as an influencing factor when looking at the demands placed on our community and natural environment. Air and water quality, groundwater quantity, energy demands, and public services are only a few of the areas affected by growth.

Greene County and the City of Springfield building departments are responsible for issuing permits and tracking the construction of building projects. In comparing new single-family building permits over the past six years, Greene County has seen a continual decrease in these permits since 2005, where the City of Springfield has seen a decrease since 2004, although it ended with a slight increase in 2009. The number of issued permits is noted in the chart below.

Single Family Building Permits

Year	Greene County	City of Springfield
2004	1,032	535
2005	1,268	437
2006	970	393
2007	524	208
2008	297	142
2009	265	145
Total	4,356	1,860

(Source: Greene County Building Regulations; and www.springfieldmo.gov)

A recent study completed by the MarketGraphics Research Group for the Springfield Home Builders Association included area demographics and housing projections through 2014 for a six county area (Greene, Christian, Taney, Stone, Barry, and Webster, which will be added in the housing forecast in 2010). The study predicts a slight increase in housing in 2010, followed by a slightly greater increase in 2011, and more gradual increases through 2014 (www.mgresearch.net).

Galloway Creek Greenway Trail at Sequiota

Rural lifestyles reflect the area's past and future

Aerial view of Downtown Springfield

Solid Waste Management

Solid Waste Management Recommendations

- Develop long-term, stable, local markets for recyclables as a key component to a sustainable recycling program, supporting efforts to establish or expand local markets to reduce costs
- Recognize and continue support for the Missouri Waste District system as a vital resource for our community
- Expand work with businesses, industries, etc. to provide technical assistance in their efforts to reduce waste and utilize environmentally responsible products and practices
- Create education, outreach and incentives to raise public awareness of the benefits of waste reduction, the availability of technical assistance to put programs in place and information as to how to access state and local services
- Expand rural area recycling options to include curbside recycling and further development and support of recycling centers, including mobile facilities to increase convenience to the rural recyclers
- Generate independent, stable funding sources for programs that can legitimately encourage waste reduction and foster education and other efforts such as the City of Springfield Integrated Solid Waste Management System
- Implement incentives for the cultivation and support of end uses of recyclables to ensure long-term sustainability of the over-all recycling effort. Incentives could include a surcharge of virgin products, bottle charges, etc.
- Research best practice programs and activities, particularly the funding mechanisms for those practices that may be beneficial to implement in Springfield / Greene County
- Develop a waste district-wide enforcement plan for solid waste haulers to ensure both existing and future regulations are followed
- Provide rural residents with methods of letting their elected officials know they want recycling services

Solid Waste Management

Status and Activities

The period of 1/1/07 – 12/31/09 saw extreme volatility with historic highs in recycling markets followed nearly overnight by historic lows in those same markets, creating new challenges for the recycling industry and anyone associated with it. In spite of these challenges, recycling infrastructures in Springfield, both public and private, remained strong, positioning Springfield as the recycling hub of the region.

Noble Hill Alternative Energy Center

In the midst of the market downturn, the Computer Recycling Center, New American Recycling and Midwest Fibre all completed significant expansions to their facilities. In addition, Allied Waste, Automated Waste and WCA introduced single-stream/commingled curbside recycling services to their customers, utilizing the newly-expanded sorting facilities of New American Recycling and Midwest Fibre.

The City of Springfield (the City) and City Utilities of Springfield successfully launched the Noble Hill Alternative Energy Center – a state of the art methane recovery project at the Springfield Sanitary Landfill. The energy derived from the project produces the equivalent of electrical power to around 2,000 homes.

Special Event Recycling

Business/institutional recycling increased both individually and collectively, as seen in the Central Street Recycling Coalition – a collaboration of Drury University, Central High School, Springfield R-12 Administration, the City of Springfield, City Utilities of Springfield, Ozarks Technical Community College, the Springfield/Greene County Library and Greene County.

Through grant assistance from the Solid Waste Management District "O", Springfield/Greene County Choose Environmental Excellence, working with the City of Springfield rolled out a successful Special Event Recycling Services package, offering loaner containers, signage and assistance in securing a contractor, setting up the bins and promoting the recycling activity.

The City's Integrated Solid Waste Management System received a major boost with the reaching of a voluntary agreement with the two largest private haulers which produces a stable funding source for the Solid Waste Management Division activities for a term of 10 years.

Ozarks GreenScore

Progress Towards Recommendations

- News about expanding local markets:
  - The City became the end user for the glass it collects – using the glass in road bed and similar construction projects.
  - The Computer Recycling Center tried its hand as a new local processor for glass and styrofoam.
  - Black Oak Organics became a new local end market for construction/demolition waste and food waste.
- Waste District "O" received increased allocation as a result of revised state formula – raising the grant pool to approximately $300,000 per year.
- Ozarks GreenScore (offered by the partnership of: Ozarks Center for Sustainable Solutions at Drury University, Students in Free Enterprise at Drury University, Springfield/Greene County Choose Environmental Excellence and Partnership for Sustainability) provides technical assistance and recognition for businesses as they implement and expand their participation in environmentally responsible practices. The relatively new program also raises awareness in the business community regarding resources, technical assistance providers, etc.

Progress Towards Recommendations, Continued

- The City of Springfield has revamped their website to include a downloadable version of the expanded "Guide to Recycling in Springfield," now offering over 125 locations and accepting a wide variety of materials, as well as the location of area municipalities' recycling facilities.
- Solid Waste Management District "O", working with the City of Springfield, gave support and continued annual or biannual availability of household chemical disposal in areas that are not served by the City of Springfield's Household Chemical Collection Center.
- Stable, adequate funding for the City of Springfield's voter-approved Integrated Solid Waste Management System has been secured via a voluntary agreement between the City and Allied Waste and the City and WCA whereby a consistent, agreed upon level of solid waste tonnage will be received daily at the City's Sanitary Landfill for the next 10 years.
- Expand rural area recycling options to include curbside recycling and further development and support of recycling centers, include mobile facilities to increase convenience to the rural recyclers. During 2008 and 2009, District "O" awarded five grants totaling $108,955.00 to develop, support, and/or expand rural recycling centers.
- Provide rural residents with method of letting their elected officials know they want recycling services. District "O" holds 11 District Executive Board meetings per year. Members of the Executive Board include the presiding County Commissioner of each county in the district, an additional County Commissioner from Greene County, and two members of the Springfield City Council. These meetings are open to the public.
- Recognize and continue support for the Missouri Waste District system as a vital resource for our community. Funding to our Waste District "O" allows or would allow our community to:
  - Continue state and district support for rural communities, especially in start-ups through financial and technical assistance support
  - Increase environmental education efforts, including water quality, waste reduction, air quality protection, and others by creating and cooperative environmental education coordinator position
  - Continue waste reduction efforts within the five county Waste District "O" region that includes citizen access to recycling centers within 20 miles
  - Support and continue annual or biannual availability of household chemical disposal in areas that are not served by the City of Springfield's Household Chemical Collection Center

CITY of SPRINGFIELD
SOLID WASTE MANAGEMENT DIVISION

Solid Waste Management DISTRICT O
Christian, Dallas, Greene, Polk & Webster counties
940 Boonville, Springfield, MO 65802

CHOOSE ENVIRONMENTAL EXCELLENCE
Springfield Greene County

Water Quality

Water Quality Recommendations

Springfield/Greene County should continue the ongoing testing of water points and a comprehensive research and public education effort should be made

Continue support for current initiatives to protect water quantity such as Household-Chemical Collection Center, the Springfield / Greene County Septic Tank Maintenance Program and other efforts

Review and revise, if necessary, current regulations, ordinances and building codes to take into consideration their impact on water quality

Encourage regional planning and collaboration efforts to promote water quality and water quantity related activities and initiatives

Through legislative and budgetary action, Missouri Department of Natural Resources funding should be kept at a level that allows the agency to administer programs, provide education and technical assistance, and have sufficient staff to enforce regulations to the state and protect the natural resources of Missouri

- Enhance or create conservation efforts that focus on maintaining or replacing trees in new development sites. This might include the creation and adoption of new building codes to ensure that conservation efforts are practiced
- Support the ability of local governments to regulate the locations or quantity of groundwater withdraws --currently, there are no laws regulating water quantity, except for reporting levels of use

Create mechanisms for the identification of sensitive watershed areas

Support the ability of local governments to determine whether or not the Confined Animal Feeding Operations are appropriate in their jurisdictions and where such facilities could be sited

Promote community utilization of the Watershed Center as an educational and demonstration center for good water quality practices

Expand the role of the Ozarks Environmental and Water Resources Institute (OEWRI) at Missouri State University to include Water Quality Data Clearinghouse and Research and implementation of appropriate Recommended Management Practices (R.M.P.'s)

- Enhance coordination between water and wastewater programs in area municipalities through the creation of a regional water resource authority

Support the Show-Me Yards and Neighborhoods Program and other efforts to develop outreach and education programs on non-point sources for nutrients

Water Quality

Status and Activities

City Stormwater:

Over the last two years, Springfield has accomplished much to address the impacts of stormwater runoff on water quality. Prior to 2007, there were very few if any examples of Low Impact Development (LID) techniques in the Springfield-Greene County area. Thanks to cooperative efforts by the City of Springfield (the City), Greene County, watersheds groups, private entities, and other partners, Springfield now have three vegetated green roofs, ten rain garden demonstration projects, numerous applications of pervious pavement, two large-scale rainwater harvesting systems, and more. Green Circle Shopping Center, which received a $192,000 grant from James River Basin Partnership (JRBP) through the Southwest Missouri Water Quality Improvement Project, exemplifies the Low Impact Development approach to a commercial development and is intended to be the first Platinum LEED Certified shopping center in America. The Habitat for Humanity Legacy Trails subdivision is a model for how to rethink storm water management using LID on a neighborhood scale. The Discovery Center and the Watershed Center showcase many LID techniques and educate visitors on their importance for water resource protection. Other accomplishments in advancing the use of LID include the Ripple Effect LID Conference put on by JRBP, and their recent efforts to work with the developer of the planned 60/65 development (Planned Development 330) to incorporate LID and other water quality protection measures. JRBP and the City also began a rain barrel program in 2007, with a rebate for Greene County residents funded by Public Works, Greene County Resource Management, and City Utilities. Since the program began, 924 rain barrels have been sold to Greene County residents.

Urban waterways are also receiving much needed attention. In 2007, the City's first "stream daylighting" project was completed on Jordan Creek North Branch. Greene County and partners completed a restoration of Ward Branch to address severe erosion through the installation and evaluation of alternative stream stabilization techniques. The City has recently completed preliminary designs to address the condition of the streams and lakes in Fassnight, Sequiota, Doling, and Close Memorial Parks, as well as Dickerson Park Zoo. These projects will be constructed in 2010-2011. Jordan Creek Feasibility Studies are being conducted by the U.S. Army Corps of Engineers, in cooperation with the City, to identify flood reduction and environmental restoration opportunities along Jordan Creek.

Watershed Committee of the Ozarks and Partners:

Many improvements have been made at the Watershed Center. The Watershed Committee received $100,000 from the MDNR Recreational Trails Grant program that helped pay for a bridge over the dam, a trail extension and a stream crossing. The "Boy Scout Bridge" was designed and constructed with the help of Greene County and a local Boy Scout, allowing the trail loop to be open even in wet weather. The waterfowl viewing blind was created with the help of the Greater Ozarks Audubon Society, Greene County, and Tavares, Williams and Sons Construction. The Watershed Center now has a well-positioned "duck blind" in the wetland area of Valley Water Mill Lake. The blind is camouflaged and has two viewing ports allowing for wildlife viewing, photography, or a shady place to rest along the trail. Construction was completed on two fishing piers and a connecting boardwalk on the east shore of Valley Water Mill Lake. Despite the wettest spring on record in 2008, construction stayed on schedule.

Watershed Center site

Bridge over dam at the Watershed Center

Picture of the Little Sac River — Watershed Committee of the Ozarks

Status and Activities, Continued

These structures provide recreational and educational opportunities to the public, especially underprivileged and urban youth, through fishing. Funding was made available through grants from Missouri Department of Conservation ($49,500) and donations by suppliers including Meeks ($1,000) and Herrman Lumber (material provided at cost, value approximated at $7,742). Total Project Cost was $98,074. It is anticipated that more than 2,500 youth per year will utilize and benefit from the fishing piers through formal education activities. Additionally, more than 500 persons will benefit from the increased accessibility to recreation and passive learning opportunities provided by this facility. The Fishing Piers were completed by October 15th and dedicated on November 14th, 2008. The wayfinding project is an ongoing project to help people explore the Watershed Center. In 2009, Stacey Armstrong improved the map of the facility. Each trail, or section of trail, now also has colored trail markers, with the colors corresponding to the colors on the new map. Plans for a comprehensive kiosk and Watershed Center Guide book have been developed and should be implemented in 2010. WCO installed the Kelley-Stokes memorial bridge monument in July of this year. The monument is made from marble from the historic Phenix Quarry to match the stone of the streamside learning station. The stone sits in a scenic spot and bears an inspirational message. The Forestry Learning Station is another new addition, located just off the Doline Loop Trail, on the edge of a pronounced sinkhole in the upland forest. Using a grant from the LAD foundation, volunteers organized by Dave Sturdevant built Leopold Benches for the spot. The benches can accommodate a solitary hiker or a whole class. Stormwater best management practices are in place which include pervious concrete, a rain garden, wetland detention area, and rainwater harvesting on the Lakeside Learning Station. The ultra efficient geothermal heating and cooling well system for the Watershed Center of the Ozarks has also been installed, made possible by a $50,000 Grant from the State of Missouri's Environmental Improvement and Energy Resources Authority (EIERA).

Water Quality Projects

Adopt-A-Spring: Adopt-A-Spring is a volunteer water quality monitoring program. Trained volunteers collect water samples quarterly from the major springs with public access in Greene County

Community Onsite Wastewater and Stormwater Project (COWS): The Community Onsite Wastewater and Stormwater Project was completed in July 2008. The Missouri Department of Natural Resources awarded this grant of $185,750 to the Watershed Committee of the Ozarks (WCO). Nonfederal matching support of $123,900 was provided through the Watershed Committee of the Ozarks and its partners, for a total project cost of $309,650. Milestones for this grant included the first phase of the Onsite Wastewater Training Center, septic pump out coupons, septic system remediation and demonstration site, stormwater education and demonstrations, groundwater monitoring wells and educational workshops, and homeowner resources.

Little Sac River Watershed Management Plan: The goal of the Missouri Department of Natural Resource's 319 mini-grant is to initiate a stakeholder driven process to produce a management plan, which includes a priority list of management practices to maintain and improve the water quality in the Little Sac River. A draft of the plan has nearly been finalized.

Onsite Wastewater Training Center (OWTC): This training center serves as an outdoor classroom for onsite wastewater installers. The COWS grant and Water Quality Improvement Project helped to fund this collaborative project between Greene County and the Watershed Committee. The site is often used by Greene County, Missouri Department of Health and Senior Services, James River Basin Partnership, and WCO for training courses and educational events.

Rader Farm Demonstration: Despite two successive major ice-storms, Jerome Rader completed the first phase of the Rader Family Demonstration Farm. WCO assisted him by cost-sharing on the installation of environmentally friendly farming practices. Here, local farmers can view practices including riparian tree restoration and livestock exclusion, alternative watering systems, and properly installed stream crossings for heavy equipment and machinery.

Source Water Protection Plan: City Utilities and Watershed Committee of the Ozarks partnered to create a Source Water Protection Plan (SWPP). Data gathered by Missouri Department of Natural Resources in 2004 was

Status and Activities, Continued

utilized to assess the susceptibility of drinking water sources to contamination. The SWPP is not required, but is a voluntary process that is encouraged as a tool to safeguard local water supplies. When complete, the SWPP will provide for emergency response planning and educating citizens about water quality measures that can be taken.

Springfield-Greene County Health Department Sampling: Each year, WCO partners with the Springfield-Greene County Health Department during the summer months to collect stream bacteria samples in local swimming holes throughout Greene County. The samples are collected once a week from May until September, and results are posted on the Health Department website for public access.

Valley Water Mill Monitoring: The Watershed Committee partnered with City Utilities to sample weekly bacterial levels at Valley Water Mill from April 2008 to March 2009. The study will evaluate fluctuations in bacteria levels in the springs, streams and lake while looking for stormwater effects. A report summarizing the data will help focus better management practices on and around the site in the future.

Water Quality Monitoring: WCO monitors for nutrients and bacteria at eighteen sites in the Little Sac River Watershed, a primary source of drinking water for Springfield and Greene County. Other tests include temperature, conductivity, dissolved oxygen, pH, phosphorus, nitrate, total coliform and *E coli*. The data was collected and analyzed monthly during 2008.

Water Quality Improvement Project (WQIP): Awarded in May, 2006, the $400,000 funding was provided to improve and protect water quality while enhancing economic development for municipalities, agriculture and tourism. The Watershed Committee of the Ozarks teamed up with Table Rock Lake Water Quality Inc. to demonstrate the remediation of failing wastewater systems and groundwater work which has carried on through 2009.

Education and Outreach

Media Releases: The Watershed Center had four excellent media spotlights in 2008. Missy Shelton of KSMU (NPR), did a two part segment about the Watershed Center, environmental education, and climate change. The National Audubon Society sent a videographer to record the TogetherGreen event at the Watershed Center to be used as a national showcase for the TogetherGreen Project. Mike Kromrey was interviewed on KOLR 10 about the Onsite Wastewater Training Center.

Publications:

The Value of Protecting Missouri Streams (Matt Keener and Olson and Associates)

A Historied Creek, by Loring Bullard. Missouri Resources Magazine

Watershed of Information, by Victoria Lovejoy, Missouri Resources Magazine

How to Build a Rain barrel, WCO and JRBP

Community Onsite Wastewater Stormwater 319 project booklet

Signs (Interpretive): These interpretive signs were created in 2008 to augment passive learning opportunities at the Watershed Center and are posted on the Watershed Committee Website.

Beyond the Basin, Bioswale Sign, Detention Basin, Forests and Watersheds, Forest Management, Gabion Basket Wall, Lakeside Biology, Level Spreader Trench, Native Vegetation, Outlet Protection, Pervious Pavement, Rain Garden, Site Construction, Storm water 101, Water Treatment Process, Welcome to Onsite Wastewater Training Center

A Partnership for Water Conservation: Drury University, City Utilities (CU), and the Watershed Committee of the Ozarks (WCO) have teamed up for a multi-pronged water conservation initiative on the Drury Campus. Through grant funding, WCO purchased a large quantity of water conserving devices like sink aerators, low flow showerheads, leak detecting tablets, and shower timers. Over the summer, many of these devices were installed in buildings on campus. Drury sponsored WCO to host a booth at the new student involvement fair on August 24th to recruit volunteers and promote water conservation. To help tell this story and measure the effectiveness the programs, Drury and CU will be working to record how much water is being saved. We are looking forward to making a difference, and measuring it!

Watershed Festivals: The James River Basin Partnership along with WCO holds Watershed Festivals every year. In 2008, WCO pledged volunteers or staff to every festival held, and hosted about 1,500 regional fifth graders to an intense day of fun water education.

Status and Activities, Continued

WOW, WDU and WOW School: Wonders of Watersheds (WOW) brought over 1,400 fifth grade students from local schools to the Watershed Center. A grant from the Community Foundation of the Ozarks and partnership with Wonders of Wildlife and Springfield-Greene County Parks allowed students to learn about their watershed. Wonders Down Under (WDU) was a successful program in 2007 and was brought back by popular demand. Ninety-two area fifth grade students toured Giboney Cave, visited the stream trailer, saw live animals, and learned about the importance of clean water above and below ground. The Wonders of Wildlife National Outdoor Recreation and Conservation School (WOW School) teaches participants how to enjoy a wide range of outdoor recreation activities while practicing personal safety and environmental responsibility. Each course includes an outdoor skill, conservation, safety, and ethics component. Watershed Committee of the Ozarks (WCO) participated in two WOW Schools in 2008, making beginner stream ecology available for the 261 participants.

Jordan Creek Book: WCO and the City of Springfield Stormwater Division published "Jordan Creek: Story of an Urban Stream" as part of the educational series of the Watershed Center. This book explores the public works history of Jordan Creek and the impacts of urbanization on its watershed.

"Clean Water Day" with Springfield Cardinals: The Springfield Cardinals and WCO promoted clean water education and conservation at the home game on Monday August 25, 2008. The night included water trivia every inning, free WCO water bottle give-a-ways, and free autographed copies of the book, " Consider the Source," by Loring Bullard. Water trivia and informational signs were displayed in the stadium and water conservation materials were available to the public throughout the Springfield Cardinals season.

Special Events: WCO had a booth at Artsfest and held a Stream Critter Drawing Contest for the kids. Chelsea R. was the winner and kids t-shirts were printed with her crawdad drawing. Stream Critters, including crawdads, beetles, and mayfly and dragonfly larvae, were available in a container for kids to see, touch and draw. WCO, in collaboration with the Tri-State Water Resources Coalition, hosted a conference called, "Our Water Future: The Regional View ", in Joplin in September, 2008. Over 150 people attended this important conference, which featured experts on our regional water situation as well as Atlanta, Seattle, and Tucson water situations. WCO also co-hosted two important dignitaries during the year. In October, Richard Louv, author of "Last Child in the Woods", was in Springfield to discuss his ideas on "nature deficit disorder" and how to get kids excited about the outdoors. As part of this community-wide event, the WCO held a workshop with Louv and area educators at Bass Pro Shops. Louv also was taken on a tour of the Watershed Center, where he met with regional education leaders and interacted with kids enrolled in the Springfield School Systems' WOLF School Program. In December, WCO helped to host Justice Bill Hobbs of Colorado. Justice Hobbs, who was in the city to meet with several groups on the topic of "water law", was also taken on a tour of the Watershed Center site. He spoke of the Watershed Center and the importance of water education at his public affairs presentation at the Plaster Student Union at MSU. In 2009, the public affairs conference at MSU focused on sustainability. Watershed groups and the City were involved in making the event a success.

Ozarks Water Watch Update (Upper White River Basin Foundation)

Bi-State Agreement: The bi-state agreement between Arkansas and Missouri, signed by the governors of the two states on November 24, 2008, pledges the two states, through their natural resource departments (ADEQ and DNR) to communicate and cooperate on issues involving water quality and quantity in watersheds shared by the states. Regular reports are to be made to the respective governors.

Status of the Watershed: The second annual "Status of the Watershed" report, based on scientific studies of water quality in the upper White River watershed was issued in the fall of 2009. Follow up has included distribution of the report with recommendations for its use to local, county and state officials with interest in and responsibility for public policy related to water quality.

Guide Book Publication: Preparation and publication of the educational booklet "Living with Land and Water in the Ozarks: A Landowner's Guide to Streamside Living" on behalf of all the watershed organizations was completed. Approximately 4,000 printed copies have been distributed and electronic versions have been made widely available.

Communication: Regular communications, highlighted by the weekly newsletter, "Ozark Waters," have provided outreach and education about water quality issues and threats in the region.

Status and Activities, Continued

Greene County Update

Legacy Trails: In 2004, a partnership was formed between Greene County and the local chapter of Habitat for Humanity to develop a new residential subdivision, Legacy Trails, using Low Impact Development (LID) techniques. LID design operates under the concept that the most effective way to reduce both flood risk and discharge of pollutants is to reduce total volume of runoff at its source by allowing water to infiltrate into the ground. Legacy Trails is a 56 lot subdivision in northwest Springfield. Construction of phase one began in 2006 and infrastructure installation for phase two is scheduled to begin summer 2010.

Habitat for Humanity Legacy Trails located at 3800 N FR 143 Springfield, MO

Legacy Trails utilizes many LID design elements to capture runoff and keep peek runoff rates the same as they were before development. Bio-retention basins capture and infiltrate runoff from a 95th percentile storm (up to 1.5 inches of rain in 24 hours). Curbs and gutters were eliminated to allow runoff to enter vegetated swales where it can be filtered by vegetation and have a chance to infiltrate into the ground. Street widths were reduced to 20 feet from the standard 27 feet to minimize the amount of impervious ground cover. Landscaping for the development utilizes native prairie vegetation to improve infiltration, reduce maintenance costs, and eliminate the need for irrigation.

Greene County is currently utilizing the Legacy Trails subdivision as a "living laboratory" to develop the skills and expertise needed to successfully implement LID on a community-wide scale. The experience gained on this site will be used to develop LID standards specific to the area as well as to develop training programs for grading and landscaping contractors and design professionals. Based upon experience, Greene County is convinced that the types of LID techniques utilized for the Legacy Trails development can be very effective in reducing runoff volume and corresponding volume of pollutants on a community-wide basis.

Ward Branch

Ward Branch: Like many urban streams, the Ward Branch in south Springfield has experienced rapid erosion due to increased storm runoff from upstream urban areas. Sediment from eroding streams in Springfield can have a negative impact on the water quality of the James River and Table Rock Lake. The four-year long stream restoration effort was the first attempt in southwest Missouri to stabilize part of an urban stream using alternative "soft" engineering practices.

A variety of stabilization techniques were employed on a total of 3,000 feet of stream channel. Design and construction included vegetated rip-rap bank armoring, riparian tree planting, vegetation preservation, grade control structures to reduce water velocity, and the establishment of two acres of native grass and wildflower prairie. The goals of the project were to stabilize a severely eroding section of the stream and then evaluate the effectiveness of the engineering methods utilized for use in future urban stream restoration efforts. Geomorphic monitoring since construction was completed and estimated that 294 tons of soil and 234 lbs of phosphorus have been prevented from moving downstream into the James River and Table Rock Lake. The project was made possible by a grant from the Missouri DNR and cooperation from many different organizations including Greene County, Missouri Department of Conservation, City of Springfield, and Missouri State University.

City of Springfield Wastewater Update

The City of Springfield was the recipient of funding from The American Recovery and Reinvestment Act of 2009 (ARRA). This funding allowed two projects to occur.

Project #1: Spring Branch Trunk Sewer

Funding: $3.0 Million ARRA Grant

Description: Includes construction of almost two miles of 36 inch sewer lines from Airport Lift station to the Sac River Line near the Northwest Wastewater Treatment Plant. Benefits are: removal of an existing lift station that has been high maintenance and presented liability concerns, lower power costs, and additional capacity.

Status and Activities, Continued

Project #2: Ozone Generator Replacement at Southwest Plant

Funding: $13 million ARRA Direct Loan

$1.09 million left over State Revolving Funds

Description: Project will replace aging equipment and increase capacity of disinfection by about 50% and will potentially increase wet weather capacity of the plant by as much as 30 to 50%. Project will also reduce energy consumption because of the upgrade in equipment and technology. Savings are estimated at $200,000 per year.

City of Springfield Wastewater Treatment Facilities Earn 2008 Peak Performance Award : The City of Springfield has earned a Gold Peak Performance Award from the National Association of Clean Water Agencies for its wastewater treatment facilities. The two Facilities - the Southwest and Northwest Treatment Plants – achieved 100 percent compliance with their National Pollutant Discharge Elimination System (NPDES) permits for 2008. On average, more than 39 million gallons of wastewater are collected and treated in Springfield everyday.

For more information, log onto: www.springfieldmo.gov/sanitary

City of Springfield Southwest Treatment Plant:

Plant Expansion: Phosphorus removal, denitrification, and the most recent expansion and upgrade of the Southwest Wastewater Treatment Plant has also been completed. This $29 million expansion increased the treatment capacity and improved the plant's ability to accept more flow during wet weather. The increase in hydraulic capacity amounts to about 28% during high flows. The upgrade also increased reliability in plant processes and equipment. An influent pump station, primary clarifiers, modified aeration basins and other plant clarifiers were added as well. Facilities for improved odor control were also added.

Flood Control: During the evaluation of the Southwest Plant for expansion, engineers determined that a significant portion of the plant would be subject to flooding during 25 or 100-year floods. The design currently calls for the construction of berms, floodwalls, and storm water pump stations to protect the plant from flooding. The cost of this project was estimated at $3.5 million and construction began in the spring of 2008 and was completed in 2009. One million dollars of the cost is being paid for through an EPA matching grant.

Modification of Digesters: An evaluation of the Southwest Wastewater Treatment Plant's biosolids digesters is currently being conducted. The option of modifying the digesters for production of Class A biosolids is being explored. Certification to Class A Expansion and modification of the digesters will improve the reliability of the biosolids program and offer fewer restrictions on its use. It is expected that the evaluation will lead to the design of new facilities.

Odor Control Demonstration Project: As a test project to evaluate the effectiveness of chemical odor control, the City put in place a demonstration project testing the effectiveness of ferrous chloride and peroxide on odors at the Southwest Wastewater Treatment Plant (SWTP). Chemicals were fed in various locations in the collection system and it was determined that not only were the odors reduced, but the chemicals being fed significantly reduced the amount of alum needed for phosphorus reduction at the SWTP. Based on the reduction of odor-causing sulfur dioxide, it was determined that the potential for reduction of corrosion was substantial. The success of the project was demonstrated through the reduction of odors at the treatment plant and in the collection system, reduction of corrosiveness as indicated by reduction of sulfur dioxide, and the cost effectiveness because of the significant reduction of treatment chemicals at the SWTP.

Southwest Wastewater Treatment Plant

Status and Activities, Continued

City of Springfield Northwest Wastewater Treatment Plant:

The expansion of the Northwest Wastewater Treatment Plant was designed to provide additional capacity for treatment as well as phosphorus and nitrogen removal (neither are currently required for this facility). The expansion includes the new headworks facility and influent pumping, selector basins, blower building, odor control facility, and final clarifier. Switching to ultraviolet disinfection eliminates the chlorine and sulfur dioxide that has been used in the past. This was done partially as a safety measure due to the toxicity of the two gases. The expansion increases the plant's ability to handle wet weather flows from the current 12 million gallons per day to 23 million gallons per day. The $21 million project was completed in 2008.

Missouri Water Environment Association Presents 2009 Industrial Pretreatment Awards : The Missouri Water Environment Association (MWEA) presented their 2009 Annual Industrial Pretreatment Awards on March 29, 2010, to 21 local industries that have permitted discharges to the Springfield publicly owned treatment works. There were one platinum, sixteen gold, and five silver award recipients for 2008. Silver recipients may have only minor violations of their permit requirements, gold recipients must have exceptional compliance with their permit requirements, , and platinum recipients must have five annual gold awards in a row to receive the distinction of the platinum award. Nominations for the awards are submitted to the MWEA by the Industrial Pretreatment Program of the Springfield Public Works Department. The awardees are listed as follows:

Platinum
Bay Valley Foods, LLC.

Gold
American Products
Ameripride Linen & Apparel Services
Aramark Uniform Services
Archimica
Cintas Corporation
Custom Metalcraft
Enterprise Laundry
Glanbia
Hiland Dairy
Kraft Foods Global
Loren Cook Company-Dale St.
Milky Way Transport Company
Northstar Battery –Plant#2
Ozark Circuits
Positronic Industries
Stainless Fabrication

Silver
Central States Industrial Equipment & Service
Culligan of Springfield
Dairy Farmers of America
Loren Cook Company–Barnes St.
Northstar Battery Company

Northwest Wastewater Treatment Plant

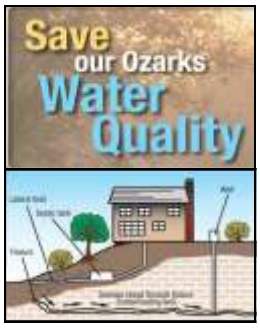
Progress Towards Recommendations

"What Goes Down **Comes Around" ad** on the back of a City Utilities bus.

- James River Basin Partnership (JRBP) conducted 348 septic tank surveys in the James River Basin in October 2008 to September 2009, which included educating the homeowner on septic tank care and maintenance. Their septic tank pump out program provided reimbursement to 318 homeowners in Greene County in 2007-2009. The "What Goes Down Does Comes Around" project (a collaboration of JRBP, the City's Storm Water Services and Solid Waste Management Division, and funding by a Community Foundation of the Ozarks Grant) expanded the existing education efforts on proper disposal of household chemicals by advertising the Household Chemical Collection Center and locations for recycling used motor oil.

- New developments city-wide are now required to implement Best Management Practices (BMPs) to treat stormwater runoff. Design criteria to meet these requirements are included in the City's new draft Stormwater Design Criteria, which also includes stream buffer requirements and is anticipated to be finalized in 2010. The existing City ordinance regulating erosion and sediment control on construction sites was revised to implement a new Land Disturbance Permit Program to address pollution from construction sites.

- The new program provides a multitude of tools, resources, and training opportunities for developers to comply with state and local land disturbance regulations. The new program provides a multitude of tools, resources, and training opportunities for developers to comply with state and local land disturbance regulations. Additional modifications to the City's stormwater regulations for developments will be guided by the City's new MS4 permit, which has not yet been issued by the Missouri Department of Natural Resources. A comprehensive review of all City regulations such as parking codes, zoning, and street design standards to assess their impact on water quality has not been completed.



- Area MS4 communities have begun to collaborate on MS4 monitoring activities and to share resources to accomplish mutual requirements to educate engineers and contractors on erosion and sediment control. Regional planning and coordination also included working with four watershed organizations in southwest Missouri though the Water Quality Improvement Project, and working with Tri-State to put together a regional conference on drinking water in the Joplin area in 2008.

- The Show-Me Yards & Neighborhoods (SMY&N) program has continued to provide education on lawn care practices to reduce non-point source pollution through the Yard Rx video series, two workshops for professionals, and distribution of informational materials. JRBP's soil testing program experienced a 50% increase in participation as a result of the "What Goes Down Does Come Around" project. In total, 257 Greene County households participated in JRBP's soil testing program in 2007-2009, with results showing that 45% needed no additional phosphorus on their lawns.

- The City and County stormwater programs lack a dedicated, long-term funding source to continue to comply with increasing federally-mandated stormwater quality requirements and address ongoing system maintenance and improvements. A preliminary study has been completed of potential long-term funding sources. It is anticipated that the evaluation of strategies, the public input process, and a City-County funding referendum will be completed in time for implementation of a resulting long-term funding source at the five-year sunset of the current tax in 2012. The national economic downturn has reduced existing program funding and increased the difficulty of obtaining public support for future funding.

Additional Objectives

- Work to ensure that the City of Springfield is a leader for the development community by demonstrating innovative and well-designed BMPs and model compliance with regulations on all types of city-funded projects (municipal facilities, streets, sanitary sewers, stormwater improvements, parks) and in all aspects of these projects, including site planning and design, construction, and post-construction
- Develop a comprehensive Stormwater Management Plan to be adopted by City Council and accepted by Missouri Department of Natural Resources
- Continue pursuit of long-term funding for the City and County stormwater programs
- Revise and implement standards for runoff volume reduction/treatment for new developments and significant redevelopment
- Develop alternate low impact standards for public improvements such as curb-less streets

LEFT/RIGHT
Students at the Watershed
Center's Stream Side
Learning Station

Emerging Issues

- Local Food Supply
- Water Quantity
- Urban Forest Decline

Local Food Supply

Introduction

"In the past, southwest Missouri was a food-exporting region, with productive farms that supplied much of the food needs of the population. In more recent times our region has become a food-importing region, with only a small percentage of our food produced locally. Our food supply , and thus our population, is vulnerable to anything that might interrupt the movement of food, and with only a few days of reserve food on hand, the residents of Springfield/Greene County would be well served by policies that promote the production, processing, and marketing of local foods."

Status and Activities

Greater Springfield Farmers Market

These are some activities of community/volunteer groups, city and county agencies, and other governmental agencies to raise awareness of this issue and to provide educational opportunities:

- Many activities of MU Extension horticulture program and the Greene County Master Gardeners provide support and educational opportunities for commercial and home food producers. These activities include Master Gardener training, quarterly seminars, site visits, soil testing, plant insect and disease diagnosis, and the Mo Garden classes which includes education for the general public in many aspects of food production. Nutrition education is provided through the MU Extension Food and Nutrition Education Program.
- City and county agencies are actively involved in activities to support local agriculture. Some examples include the Springfield Solid Waste Management Division composting program and monthly gardening classes at the Springfield-Greene County Library.
- The Springfield/Greene County Parks Department is actively involved in supporting local agriculture. The construction of the Botanical Center will focus on horticultural support for food production in Greene County. Activities at Rutledge Wilson Farm Park, including the community garden program, educational activities, and demonstrations of livestock, raise awareness among the general public concerning the important issue of local food production.
- Several schools in both the Springfield Public Schools and private school systems actively support local food education and production among the students, families, and staff. Schools with current or planned gardens include Pleasant View Middle School, Boyd Elementary, Pipkin Middle School, and Springfield Catholic High School.
- Several area churches have established community gardens with the express purpose of providing fresh local food to area food pantries.
- Activities at the Victory Mission and The Kitchen are utilizing locally produced foods.
- Grassroots efforts among the citizens of Springfield/Greene County are focusing attention on the issue of local food production. Specific examples include the Well Fed Neighbor Alliance, the 1000 Gardens Project, a Food Policy Coalition for the area, and an Urban Agriculture Alliance that is under development in Springfield.

Recommendations

Many complex issues are emerging as Springfield/Greene County moves toward a more localized food system. These issues range from the use of our backyards to the potential for large scale production of vegetables, fruits, grains, and animal products.

- To encourage increased home food production, further revisions of city and county zoning are needed to allow for small scale non-commercial production of small live stock and poultry.
- Local foods for economically disadvantaged residents is currently a stated need from several local agencies that serve this population. Encouraging developments are underway, including expansion of a community garden at the The Kitchen, the Share a Row program, and educational programs at OACAC and its Headstart centers.
- Urban agriculture offers the possibility of producing large quantities of food in urban and suburban parts of our region. This important part of the overall food production system would be fostered by revised zoning to allow for commercial production of produce, and revised zoning to encourage the construction and utilization of high tunnels, greenhouses and other structures to extend the production season.
- Marketing opportunities for locally produced foods are under development. Further development, however, is needed to bring locally produced foods to consumers. Among the identified needs are year round farmers markets for the area, a permanent home for the Greater Springfield Farmers Market, and additional farmers markets placed to serve all residents. Promotion and encouragement of Consumer Supported Agriculture (CSA) is part of this issue as well.
- The key to providing a large portion of our food needs in Springfield/Greene County from local production is through efforts that support large scale production. Legal protection for productive farmland in Greene County are also needed. Processing facilities for animal products, fruits, and vegetables are lacking. These local processing facilities would allow year round availability of locally grown products. Policies that support the formation of farmer-owned cooperatives are needed. Wholesale and retail marketing opportunities for large scale farmers are needed, such as institutional markets (supermarkets, schools, colleges/universities, hospitals, and correctional institutions).

Water Quantity

Greene County

Previous regional groundwater studies (Emmett and others, 1978 and Imes, 1989) led City Utilities of Springfield to develop surface water sources, greatly reducing their dependence upon groundwater. However, all other municipalities in the area rely solely on groundwater for their water supply. Additionally, residents in unincorporated areas and certain industrial users depend upon groundwater as a readily available and relatively inexpensive water supply. In order to assess the change in the potential metric surface of the Ozark aquifer, the primary aquifer in the area, a comprehensive study of the region was initiated in 2006 and is scheduled for completion in 2010. This study is being performed by the U.S. Geological Survey in cooperation with the U.S. Army Corps of Engineers - Little Rock District, Missouri Department of Natural Resources, Greene County Resource Management Department, City Utilities of Springfield, and the cities of Fair Grove, Nixa, Ozark, Republic, Rogersville, Walnut Grove and Willard.

In addition to measuring the changes to the Ozark aquifer since the 1989 study, a groundwater model will be created and calibrated for use in predicting water levels given specific future use scenarios through the year 2030. These projections will be based upon public well information from area municipalities and population growth statistics. These factors will then be applied through various scenarios which include drought, population growth rates, and the impact associated with high yield industrial wells within the study area. It is anticipated that this study and the resulting groundwater model will be valuable planning tools.

Trees

Urban Forests

The declining number of trees as well as tree canopy have been a growing concern in the Springfield area for many years. In addition to normal aging, ongoing pressures of growth and development punctuated by periodic natural disasters have resulted in a steady decline in the condition of our urban forests at a disturbing rate. This was, perhaps, first noticed with the demise of thousands of elm trees during the Dutch Elm Disease that occured several decades ago. It was never more striking than during the January, 2007 ice storm. Following the three days of accumulating ice, approximately 75,000 people, or 71% of the city, was left without electricity with some not having electricity for up to twelve days. The resulting tree damage left the city with over 1 million cubic yards of debris. Thousands of trees were lost, with many more severely damaged and lost in later years. For example, approximately 2,300 trees on city property and 1,800 trees on park property were lost or damaged. Following on the heels of this crushing blow, the national economic recession led to slashed budgets for both staff and tree repair/ replacement.

Tree City USA Citizens Advisory Committee, working with the City of Springfield Public Works Department, Springfield-Greene County Parks and City Utilities staff, have made the following recommendations:

- Incorporate tree preservation into the criteria required for new developments and changes in existing developments. Preserve or mitigate healthy trees during development via City ordinance. Review/revise the Plan Review Process to include the consideration of the project's impact on existing trees prior to the plan's completion. The opportunity for such input needs to be made available while there is still the opportunity to make adjustments in the development's plans. Standards need to be developed that can be used to designate specimen trees that merit special attempts to be preserved. Codes and other development guidelines need to be made flexible enough to encourage the accommodation of preservation of such identified specimen trees. In addition, an ordinance needs to be created that requires mitigation of healthy trees that are approved for removal during such development. New trees should either be planted at the development site or in a public place such as a park or school grounds. A master plan of where public agencies want trees planted and what species are desired should be prepared so that developers can choose where their mitigation trees are used.
- When constructing parking lot areas, include planting area for trees in all parking lots above a specified (to be determined) size. This would support storm water management efforts, reduce heat island effect, etc.
- Fully fund the City's Tree Management Programs. This would include funding for city staff in Public Works Public Grounds plus $1.5 million which will include restoring the Urban Forester position and seven certified arborists plus equipment as needed.
- Fund the restoration of the massive loss of city trees lost during the recent and successive natural disasters, disease and development. Maintain community tree and landscaping CIP at $450,000 ($150,000 per years for 3 years) and include support of the Neighborwoods Program.
- When appropriate, allow trees to be a component of stormwater management, including in the design of stormwater management infrastructure, such as allowing preservation of trees to count toward water quality requirements.
- Ensure the proper maintenance of Springfield's trees via upgrading licensing requirements for tree care professionals which include the following requirements: insurance requirements as determined to be usual to the industry; International Society of Arboriculture (ISA) Certified Arborist certification of a specified number of field personnel in each applying company; setting forth minimum care standards which include the prohibition of topping trees.

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The Environmental Collaborative of the Community Partnership of the Ozarks

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